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XLI.—SOME NEW SPECIES FROM BURMA.

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During the last five years a considerable number of new species of plants from Burma have been described and published in the *Kew Bulletin* or in the Records of the Botanical Survey of India, the majority of which were found in Maymyo and its neighbourhood or in the Southern Shan States, whilst others came chiefly from the hill regions of the Ruby Mines and Bhamo Districts. Although shrubs, climbers and herbaceous plants predominate amongst the new species, many trees, some of great size, are also included, for instance, *Manglietia Hookeri*, Cubitt & Smith, *Elaeocarpus Robertsonii*, Gamble, *Paranephelium hystrix*, W. W. Smith, *Meliosma Mannii*, Lace, *Dalbergia maymyensis*, Craib, *Acacia Myaingii*, Lace, *Pyrus kachinensis*, W. W. Smith, *Lagerstroemia Collettii*, Craib, *Homalium bhamoense*, Cubitt & Smith, *Adina indivisa*, Lace, *Diospyros glandulosa*, Lace, *Styrax Lacei*, W. W. Smith, *Stereospermum grandiflorum*, Cubitt & Smith, *Beilschmiedia Robertsonii*, Gamble, all from Upper Burma, while from Lower Burma may be mentioned *Rhus amherstensis*, W. W. Smith, *Millettia utilis*, Dunn, *Cordia globifera*, W. W. Smith and *Wightia Lacei*, Craib. In the same period other additions have been made to the flora of Burma by the collection of species previously recorded only from neighbouring countries, e.g., *Miliusa Thorelii*, Finet & Gagnep., *Sterculia Principis*, Gagnep., *Chaillietia gelonioides*, Hook. f., *Celastrus Hookeri*, Prain, *Acer oblongum*, Wall., *Meliosma Thomsonii*, King ex Brandis, *Dracontomelum mangiferum*, Bl., *Mucuna sempervirens*, Hemsl., *Pueraria alopecuroides*, Craib, *Dalbergia Kerrii*, Craib, *Saraca cauliflora*, Baker, *Rubus lucens*, Focke, *Rubus yunnanicus*, Kuntze, *Rosa sericea*, Lindl., *Distylium indicum*, Benth., *Viburnum erubescens*, Wall., *Viburnum inopinatum*, Craib, *Hymenodictyon flaccidum*, Wall., *Gardenia sootepensis*, Hutch., *Rhododendron indicum*, Sweet, *R. microphytum*, Franch., *R. oxyphyllum*, Franch., *Styrax grandiflorum*, Griff., *S. Veitchiorum*, Franch., *Fraxinus Griffithii*, Clarke, *Strychnos Thorelii*, Pierre, *Endiandra firma*, Nees, *Cleistanthus chartaceus*, Muell.-Arg., *Glochidion Kerrii*, Craib, *Sauropus*

bicolor, Craib, *Antidesma sootepensis*, Craib, *Macaranga triloba*, Muell.-Arg., *Macaranga indica*, Wight, *Quercus Junghuhnii*, Miq., *Quercus Rex*, Hemsl.

The above tends to show that our knowledge of the flora of Burma is by no means complete, even in the case of trees; and, taking into consideration the fact that most of the recent collectors were officers of the Forest Department who naturally pay most attention to woody species, often to the entire exclusion of herbaceous plants without economic value, it appears safe to infer that there is still much to be done in the botanical exploration of the country, especially in Upper Burma and more particularly in those regions whose elevation exceeds 3000 ft. above sea level.

Amongst the species described below, the majority of which were found at Maymyo, perhaps the most interesting is *Allospondias laxiflora*, a large deciduous tree on the small limestone hills near the lower reaches of the Salween river and its tributaries, about which doubt has existed since flowering specimens of it were first collected by Brandis in 1862; this was originally named *Buchanania laxiflora*, Kurz, but M. Pierre pointed out that it was not a *Buchanania* and was probably a new genus, a fact admitted in Indian Trees, p. 206; there is no leaf on the sheet of the specimen collected by Brandis which is in the Kew Herbarium, and it is not known what leaf (simple) was described by Kurz under *Buchanania laxiflora* in his Flora of British Burma.

With regard to the local flora of Maymyo, of which I was able to make a fairly complete collection, any general description would at present be out of place and is reserved for some future occasion. I gladly take this opportunity, however, of acknowledging with many thanks the kindness of Sir David Prain, Director of the Royal Botanic Gardens, in permitting the work of naming my collections from Burma to be done in the Kew Herbarium, and the assistance afforded me by members of the Staff. To Mr. W. G. Craib, lately Assistant for India in the Herbarium, I am especially indebted both for the keen interest he has taken in my collections and for his valuable help and sound criticisms.

***Clematis burmanica*, Lace** [Ranunculaceae-Clematideae]; a *C. Craibiana*, Lace, cui valde affinis, nervatione, indumento, filamentis multo longioribus, antheris conspicue minoribus, stigmato clavato inter alia differt.

Frutex scandens; rami graciles, teretes, sulcati, purpureo-brunnei, pruinosi, juventute pilis brevibus pallide luteis nitidis adpressis puberuli. *Folia* pinnatim 3-foliata; petiolus 8-10 cm. longus, parum costatus ut ramuli puberulus; foliola late ovata, apicem acutum versus gradatim angustata, basi rotundata, plerumque anguste cordata, interdum truncata vel ramulorum apices versus cuneata, usque ad 10.5 cm. longa et 5.5 cm. lata, terminali quam lateralibus parum majore, chartacea, juventute pilis brevibus pallide luteis adpressis praecipue ad nervos sparse tecta, mox pagina utraque fere glabra, inferiore pallidiore glaucescente, e basi vel fere e basi 7-nervia, nervis gracilibus supra magis minusve impressis subtus prominentibus, nervulis fusco-brunneis reticulationem gracilem formantibus, margine integra;

petioluli usque ad 3 cm., plerumque circa 1.5 cm. longi. *Flores* in paniculas subangustas paucifloras axillares et terminales plerumque foliis duobus unifoliolatis instructas dispositi; paniculae ad 30 cm. longae, pedunculo communi ad 13 cm. longo suffultae; pedunculi partiales ad 5 cm. longi, bracteae variabiles, saepius 5-7 mm. longae, integrae, saepe amplexicaules, pubescentes; pedicelli 1-3 cm. longi, ut pedunculi indumento glanduloso pallide luteo plus minusve deciduo tecti. *Sepala* alba, patula, ad 1.5 cm. longa et 0.6 cm. lata, multinervia, apice mucronata, parum reflexa, extra praesertim ad basem et margines prope pubescentia, intra glabra. *Filamenta* 6 mm. longa, ligulata, glabra; antherae 1.5 mm. longae, apice rotundatae. *Ovarium* pallide brunneo-hirsutum; stylus circa 4 mm. longus, plumosus, stigmatibus clavato.

INDO-CHINA. Burma: near Maymyo, Ani Sakan, 900 m., *Lace* 5927.

Clematis Craibiana, *Lace* [Ranunculaceae-Clematideae]; a *C. Meyeniana*, Walp. paniculis multo longioribus, foliolis tenuioribus basi rarissime leviter cordatis distinguenda.

Frutex scandens, ramulis gracilibus teretibus sulcatis pallidis vel purpureo-brunneis pilis albis brevibus mollibus sparse tectis. *Folia* pinnatim trifoliata, petiolo communi 4-7 cm. longo indumento ut ramulis tecto suffulta; foliola ovato-lanceolata vel ovata, apice acuminata, obtusiuscula, basi rotundata, rotundato-cuneata, truncata vel inferiora interdum leviter cordata, usque ad 11 cm. longa et 7 cm. lata, chartacea, glabra, subtus pallidiora, e basi vel fere e basi 5-nervia, nervis in foliis maturis pagina utraque sed praesertim inferiore conspicuis, reticulata, integra, petiolulis 2-5 cm. longis suffulta. *Paniculae* axillares, laxae, pluriflorae, ad 42 cm. longae, pedunculo communi ad 15 cm. longo suffultae; pedunculi partiales ad 5 cm. longi, ut pedunculus communis sulcati indumentoque ut ramuli praesertim ad nodos tecti; bracteae apice bi-vel tri-dentatae, interdum foliaceae, ad 7 mm. longae; pedicelli 1.5-4 cm. longi. *Sepala* 1.5 cm. longa, 3-5 mm. lata, alba, brunneo-nervosa, extra pallide luteo-puberula, intus glabra, apice truncato saepe reflexo. *Filamenta* 3-3.5 mm. longa, complanata, glabra, antheris 3.5 mm. longis connectivo excurrente breviter apiculatis. *Ovarium* dense albo-hirsutum; stylus plumosus, circiter 5.5 mm. longus, stigmatibus haud incrassato.

INDO-CHINA. Burma: Maymyo Plateau, on shrubs and trees near stream, 1100 m., *Lace* 6122. Named after Mr. W. G. Craib who has assisted so much in working out plants from Maymyo.

Polygala pellucida, *Lace* [Polygalaceae]; a *P. glaucescente*, Wall., foliis crassioribus, floribus majoribus, sepalo uno persistente recedit.

Herba erecta, ad 20 cm. alta, caule angulato glabro parce divaricatum ramoso. *Folia* oblongo-oblancheolata, acuta, apiculata, basi in petiolum angustata, usque ad 3.5 cm. longa et 1.3 cm. lata, coriacea, glabra, pagina superiore sicco rugosa, inferiore pallidiora; costa supra impressa subtus prominente, nervis lateralibus utrinsecus 6-8 inconspicuis vel subtus fere prominulis, margine recurva, petiolo 1-3 mm. longa suffulta. *Racemi* usque ad 7 cm. (pedunculo communi 0.5-2 cm. longo

incluso) longi; pedicelli 0.5–1 mm. longi; bractee minutae, cito deciduae; flores sulphurei, 5 mm. longi. *Sepala* tria exteriora inter se subaequalia, ovata vel oblongo-ovata, apice rotundata, 2 mm. longa, aureo-pellucido-punctata, mediano persistente, duo interiora aliformia, apice cucullata, basi cuneata, 4 mm. longa. *Petala* lateralia oblonga, apice rotundata, 3.5 mm. longa; carina cucullata, non cristata, 4 mm. longa. *Stigma* truncatum. *Capsula* obcordata, 3–3.5 mm. lata, margine superne in alam gradatim expansa, nervis satis conspicuis fere e capsulae apice radiantibus; semina globosa, parum lateraliter compressa, atra, minute tuberculata, pilis brevibus albis sparse tecta.

INDO-CHINA. Burma: Maymyo Plateau, in marshy grasslands and on banks of streams, 1050 m., *Lace* 4844.

Buettneria integrifolia, *Lace* [Sterculiaceae–Buettneriaeae]; ab affini *B. erosa*, Gagnep., foliis integris facile distinguenda.

Frutex grandis, scandens, ramulis inarmatis prominenter pluricostatis brunneis juventute pilis minutis stellatis hic illic instructis. *Folia* late ovata vel oblongo-ovata, apice subito longe acuminata, truncata, mucronata, basi cordata, lobis rotundatis, usque ad 20 cm. longa et 14.5 cm. lata, sicco tenuia, glabrescentia, praecipue ad nervos pilis paucis minutis stellatis hic illic instructa, e basi 5-nervia, nervis lateralibus (e costa ortis) utrinsecus 5–6 arcuatis intra marginem anastomosantibus cum nervis primariis pagina utraque prominentibus, nervis transversis numerosis inter se parallelis pagina utraque conspicuis, margine integra, parum undulata, petiolo 3–11 cm. longo supra canaliculato sparse stellato-pubescente praecipue apicem versus suffulta; stipulae lanceolatae vel ovato-lanceolatae, acuminatae. *Inflorescentia* generis, sparse minuteque stellato-pubescentis; pedunculi sulcati; pedicelli gracillimi, 4–7 mm. longi, medium versus articulati; alabastra conoidea, angulata; flores 0.8–1 cm. diametro. *Sepala* lanceolata, conspicue nervosa, acuta, 4–5 mm. longa, 1–1.5 mm. lata, basi inter se connata, minute sparse puberula, pellucido-notata. *Petala* ungui 2 mm. longo suffulta, limbi lobis deltoideis acutis 2–2.5 mm. latis, apice truncata, ad staminum tubum affixa, appendice anguste lanceolata 3–3.5 mm. longa glabra. *Ovarium* parum pubescens.

INDO-CHINA. Burma: near Maymyo Plateau, Gokteik Gorge, 550 m., *Lace* 5454.

CHINA. Yunnan: Szemao, 1530 m., *Henry* 13,370.

Euonymus longipes, *Lace* [Celastraceae–Celastraeae]; ab *E. acanthocarp*o, Franchet, foliis saepe integris majoribus, pedunculo longiore robustiore, ab *E. cinereo*, Lawson, foliis saepe integris, inflorescentia multo longiore recedit.

Frutex grandis vel *arbuscula*, omnino glabra; ramuli quadranguli, bifacialiter canaliculati; rami teretes, tuberculis minutis dense tecti. *Folia* oblongo-obovata ad ovata, apice obtuse acuminata, basi cuneata rotundatave, interdum parum inaequilateralia, 6–11.5 cm. longa, 3–5.5 cm. lata, coriacea, juvenilia viridia, matura griseo-viridia, subtus parum pallidiora, nervis lateralibus utrinsecus 5–6 obliquis intra marginem anastomosantibus pagina utraque conspicuis, margine parte dimidia superiore saepe

obscurius crenulata, rarius crenata; petioli 1 cm. longi, supra conspicue canaliculati. *Cymae* axillares, pedunculo communi 4-9.5 cm. longo ut ramulis quadrangulati et bifacialiter canaliculato suffultae; pedunculi partiales 1-3.5 cm. longi, ultimi pedicellis subaequilongi; bracteae minutae, triangulares, serrulatae, fugaces; pedicelli graciles, saepius 4 mm. longi; flores 4-meri. *Calycis* lobi, rotundati, recurvi, 2 mm. lati. *Petala* viva viridi-alba, orbicularia 3 mm. diametro, late unguiculata. *Filamenta* 1.5 mm. longa, antheris globosis. *Discus* 2.5 mm. diametro. *Ovarium* echinatum, stylo paulo ultra 1 mm. longo.

INDO-CHINA. Burma: Maymyo Plateau, an undershrub or small tree in damp localities, 1050 m., *Lace* 6149.

Allospondias laxiflora, *Lace* [Anacardiaceae-Spondieae]; ab *A. lakonensi*, Stapf, foliis multo majoribus, panícula terminali, fructu eum *Odinæ* simulante recedit.

Arbor excelsa, decidua, cortice laevi argenteo. *Folia* alterna, apices versus ramulorum sita, imparipinnata, usque ad 65 cm. petiolo communi 5-10 cm. longo incluso longa; foliola opposita vel subopposita interdumve alterna, utrinque 6-9 juga, ovato-lanceolata, ovato-oblonga oblongave apice abruptius longe acuminata, acuta, basi saepius rotundata, interdum inaequilateralia, superiora interdum latere altero cuneata, altero rotundata, usque ad 17 cm. longa et 6.5 cm. lata, inferioribus quam aliis conspicue minoribus, chartacea, pilis albis divaricatis pagina superiore hic et illic instructa, inferiore ad nervos nervulosque densius instructa, subtus pallidiora, nervis lateralibus utrinque 12-14 brunneis arcuatis subtus prominulis, margine integra, sessilia, terminali a lateralibus 1-2.5 cm. distante quam aliis parum minore, basi cuneata; rhachis ut petiolus teres sed sicco plus minusve canaliculata pilis brunneis brevibus molliter tomentosa. *Flores* ante folios evoluti, in paniculam copiose ramosam terminalem pubescentem 50 cm. vel ultra longam dispositi; bracteae subulatae linearesve, 1-1.5 mm. longae; pedicelli brevissimi, aggregati. *Sepala* 5, libera, imbricata, ovata, apice obtusa, circiter 0.5 mm. longa, dorso puberula, persistentia sed haud accrescentia. *Petala* 5, viva alba, ovata, apice parum cucullata, 2.5-3 mm. longa, 3-nervia, dorso minute puberula. *Stamina* 10, filamentis inferne dilatatis circa 1 mm. longis minutissime puberula. *Discus* vivus aurantiacus, 5-lobatus, lobis retusis. *Styli* 5, liberi, stigmatibus truncatis. *Drupa* oblonga, basi inaequilateralia, circa 1.2 cm. longa; semina solitaria, pendula, radícula superiore.—*Buchanania laxiflora*, Kurz in Journ. As. Soc. Beng., vol. xli. p. 304 et For. Fl. Burma, vol. i. p. 307; Brandis, Indian Trees, p. 206—certe quoad flores, foliorum descriptione exclusa.

BURMA. Thaton District: a conspicuous tree on the dry limestone hills which rise suddenly out of the plain on both banks of the lower Salween river, *Lace* 4574 (flowers), *J. C. Murray* (fruit and leaves).

Burmese name, Taung-gwè.

Uraria barbata, *Lace* [Leguminosae-Hedysareae]; ab *U. cordifolia*, Wall., cui affinis, foliis tenuioribus conspicue ciliatis, fructu pilis apice uncinatis tecto differt.

Suffrutex grandis, ramis crassis pallide brunneis striatis pilis longis albis divaricatis tectis. *Folia* late ovata, acuminata, apiculata, basi anguste cordata vel rarius truncata, usque ad 26 cm. longa et 22 cm. lata, chartaceo-membranacea, pagina utraque pilis longis divaricatis basi tuberculatis parce instructa, nervis lateralibus utrinsecus 10-11, nervis transversis inter se parallelis, margine conspicue dense ciliata; petiolus 1-3 cm. longus, indumento ei ramorum simili tectus; stipulae scariosae, striatae, dorso pilis longis albis instructae, diu persistentes, *Inflorescentia* e racemis longis et axillaribus et terminalibus laxè paniculatis constituta, usque ad 80 cm. longa; flores 3-12-fasciculati; bractaeae scariosae, lineari-lanceolatae, longe acuminatae, valde nervosae et ciliatae; pedicelli 5-7 mm. longi, glanduloso-pubescentes. *Calyx* ante fructum maturum decidui tubus circa 1.5 mm. longus, lobi longe subulato-acuminati, infimo ad 3.5 mm. longo; calyx totus sed praesertim lobi pilis longis albis divaricatis tectus. *Vexillum* obovatum, apice rotundatum, basi cuneatum, haud auriculatum, 5 mm. longum; alae et carina vexillo breviores. *Staminis* vexillaris filamentum 3.5 mm. longum. *Legumen* pilis apice uncinatis tectum; semina 1-6, brunnea, laevia, haud nitida.—*U. cordata*, Wall., var. *barbata*, Wall. Cat. 5679 B et C.

INDO-CHINA. Burma: Katha District, *Lace* 4811; Ruby Mines District, Wapyudaung, 370 m., *Lace* 5981; near Maymyo Plateau, Gokteik Gorge, 615 m., *Lace*; Upper Chindwin, Tamu, *Meebold* 7597; Taong Dong, Wall. Cat. 5679 B. Cult. Hort. Bot. Calc. e Taong Dong, Wall. Cat. 5679 C.

***Mucuna Collettii*, *Lace* [Leguminosae-Phaseolae];** a *M. macrocarpa*, Wall., foliolorum forma et indumento facile distinguenda.

Frutex late volubilis, caule basi 0.5 m. diametro, ramis crassis, cortice laevi, ramulis fulvo-pubescentibus. *Stipulae* triangulares, acuminatae, acutae, 3-4 mm. longae, cito caducae; petiolus 6-15.5 cm. longus, striatus, tomento rubiginoso deciduo tectus; foliola lateralia inaequilateralia, latere altero dimidiatim lanceolato-oblonga, basi late cuneata, altero dimidiatim late ovata, basi anguste cordata, apice saepius breviter acuminata sed interdum rotundata et emarginata, 11-15 cm. longa, 6-10 cm. lata; foliolum terminale a lateralibus 3.5-4 cm. distans, ellipticum vel oblongo-ellipticum, usque ad 17 cm. longum et 10 cm. latum; foliola omnia apiculata, chartacea, viridia, supra primo sparse setosa, demum glabra, subtus molliter cupreo-brunneo-tomentosa, nervis lateralibus utrinsecus 5-7 supra conspicuis subtus prominentibus, petiolulis validis 0.7-1 cm. longis suffulta. *Inflorescentia* racemiformis, e ligno vetustiore fasciculatim orta, usque ad 20 cm. longa, rhachi brunneo-pubescente; pedicelli validi, recti curvative, ad 1.5 cm. longi, solitarii vel 2-3 pedunculis brevissimis secundariis gesti, molliter pubescentes. *Calyx* diu persistens, extra pilis brevibus griseo-brunneis et setis satis numerosis pallide luteo-brunneis tectus, intra brunneo-tomentosus, tubo 1.5 cm. diametro circiter 1 cm. longo saepe obliquo, lobis supremis quam infimo 7-9 mm. longo multo brevioribus et latioribus, lateralibus 5 mm. longis. *Corolla* 5-6 cm. longa, purpurea vel purpureo-viridis; vexillum late ellipticum, 2.8 cm. diametro, carina circiter dimidio brevior, superne ciliolatum; alae extra basem versus pubescentes,

superne et inferne ciliatae, medio non ciliatae; carina alas superans, basi ciliata. *Staminum* tubus 5 cm. longus, antheris filamentorum brevium barbatis. *Ovarium* pilis rigidis brevibus obtectum, stylo barbato superne glabro. *Legumina* ad 38 cm. longa, 3·5–4 cm. lata, 1–1·5 cm. crassa, inter semina constricta, valvis planis, suturis obliquis, apice breviter acuminata, basi cuneata, stipite brevissimo suffulta, tomento rufo tecta demum glabra nisi ad suturas. *Semina* planiuscula, oblonga orbiculariave, ad 2·8 cm. longa et 2·3 cm. lata, fusco-brunnea vel nigra, hilo pallido margine tota quarto brevior.

INDO-CHINA. Burma: Maymyo Plateau, 1050 m., *Lace* 5866; *C. G. Rogers* 19; *Hauurwell*; Shan Hills, 1230 m., *Collett* 458.

CHINA. Yunnan: Szemao, 1530 m., *Henry* 11,702.

***Pueraria Lacei*, Craib** [Leguminosae-Phaseoleae]; a *P. alopecuroides*, Craib, floribus multo majoribus facile distinguenda.

Suffrutes late scandens; ramuli 4 mm. diametro, ferrugineo-hirsuti. *Folia* pinnatim trifoliolata, petiolo 4–7·5 cm. longo suffulta; stipulae oblongae, apice rotundatae, basi bilobae, medio affixae, 2 cm. longae, 7 mm. latae; foliola ovata vel terminalia subrhomboidea, apice acuminata sensim acutata, basi lateraliter rotundata, terminalia obtuse cuneata, 6–9 cm. longa, 3·3–5·5 cm. lata, subchartacea, margine integra, ciliata, supra tenuiter adpresse pilosa, subtus sericea, nervis lateralibus utrinque circiter 6 supra conspicuis subtus prominentibus, nervis transversis obscuris; petioluli 0·5 cm. longi, foliolo terminali a lateralibus 2–2·5 cm. distante; stipellae lineares, acutae, 1·2–1·5 cm. longae, usque ad 1·5 mm. latae. *Racemi* solitarii axillares vel ad apices ramulorum paniculati, pedunculo communi 7–10 cm. longo bracteis aliquot vacuis stipulis forma similibus sed minoribus instructo; bractee lineari-lanceolatae 1–1·5 cm. longae, 2–3 mm. latae, ferrugineo-pilosae; pedicelli 3 mm. longi, apice bracteolis 2 ovato-lanceolatis acutis 4 mm. longis 1·5 mm. latis instructi. *Calycis* extus ferrugineo-hirsuti intus appresse hirsuti, tubus circiter 0·5 cm. longus, lobi duo supremi in unum paulo ultra 1 cm. longum, apice breviter bifidum connati, lobus infimus lateralibus paulo longior, 1·5 cm. longus. *Corolla* longe exserta; vexillum reflexum late ellipticum, emarginatum, basi auriculatum, 1·4 cm. longum, 1·2 cm. latum, ungui 4 mm. longo suffultum; alae oblongae, basi longe appendiculatae, 1·3 cm. longae, ungui 0·5 cm. longo; carina obtusa inappendiculata, 1·1 cm. longa, 0·5 cm. lata, ungui 6 mm. longo. *Stamen* vexillare ima basi liberum, medio cum ceteris connatum; antherae uniformes, parvae. *Ovarium* stipitatum, adpresse hirsutum. stylo brevi glabro, stigmate parvo capitato pilis perpaucis instructo.

INDO-CHINA. Burma: Thayetmyo District, *Lace* 2685.

***Eriosema pilosum*, Lace** [Leguminosae-Phaseoleae]; ab *E. chinense*, Vogel, indumento longo albo facile distinguendum.

Herba perennis; caules graciles, 12–21 cm. alti, lignosi, striati, simplices furcative. *Folia* lanceolata, oblongo-lanceolata vel oblonga, minute apiculata, basi rotundata, ad 3·8 cm. longa, 1 cm.

lata, chartaceo-membranacea, supra viridia, pilis longis albidis divaricatis praeterea brevius pubescentia, subtus griseo-albida, tomento denso albido et glandulis aureis et ad nervos pilis longis albis divaricatis instructa, nervis lateralibus utrinque 6 supra impressis subtus prominulis, margine parum incurva, longe ciliata, petiolo 1-2 mm. longo indumento ut caule instructo suffulta; stipulae scariosae, angustae, longe acuminatae, 3-4 mm. longae, valde nervosae, persistentes. *Flores* axillares, subsessiles, lutei. *Calyx* 5 mm. longus, dentibus acutis, infimo aliis parum longiore, extra glanduloso-pilosus, intra ad dentes pilis paucis albis adpressis instructus. *Vexillum* 8-9 mm. longum, rotundatum, apice emarginatum, basi cuneatum, auriculatum, dorso pilosum; alae 7-8 mm. longae, fere glabrae; carina 6 mm. longa, apice rotundata, dorso glanduloso-pilosa. *Ovarium* pilis longis albis obtectum, stylo glabro, stigmate parvo capitato. *Legumen* oblongum, apiculatum, 0.8-1 cm. longum, 0.5-0.6 cm. latum, glandulosum, pilis longis albis dense pilosum; semina oblonga, brunnea, fusco-maculata, glabra, 3 mm. longa.

INDO-CHINA. Burma: Maymyo Plateau, 1050 m., *Lace* 6328.

Bauhinia sericea*, *Lace [Leguminosae-Bauhinieae]; *B. glabrifoliae*, Baker et *B. piperifoliae*, Roxb., affinis, ab illa floribus majoribus, ab hac ovarii suturis villosis recedit.

Frutex late scandens, cirrhosus; ramuli primo griseo-tomentelli, cito glabri, demum brunnei, sulcati. *Folia* late vel anguste ovata, saepius plus minusve bifida, saepe in ramulis juvenilibus usque ad basem, saepe prope inflorescentiam integra et apice rotundata, lobis plus minusve triangularibus apice obtusis, basi truncata vel late haud alte cordata, usque ad 13.5 cm. longa et 11.5 cm. lata, subcoriacea, nitida, glabra nisi nervis basi pilis paucis primo instructis, e basi 7-nervata, duobus basalibus minus conspicuis saepe additis, nervis supra conspicuis subtus prominentibus, nervulis rete laxum pagina utraque conspicuum formantibus, petioli ad 6 cm. longi, utrinque tumidi, primo breviter arete albo-pubescentes, mox glabri. *Flores* in paniculas corymbiformes 8-13 cm. diametro dispositi; alabastra globosa, breviter acuminata, subsericea; bracteae angustae, acutae, 4 mm. longae; pedicelli 1.5-2 cm. longi, graciles, breviter sericei; bracteolae duae, angustissimae, circiter 2 mm. longae, bene infra pedicelli medium sitae. *Calycis* tubus 3-3.5 mm. longus, limbo saepius 3-fido 5-6 mm. longo intra glabro. *Petala* viva gilvo-albida, obovata, unguiculata, 0.8-1 cm. longa, tribus superioribus margine undulatis, omnia extra medio dense pubescentia et posteriore fere glabro excepto intus ad medium et ad unguem pubescentia. *Stamina* fertilia 3, filamentis 1.2-1.4 cm. longis glabris superne angustatis, antheris oblongis 2.5 mm. longis; staminodia 3, filamentis gracillimis 5 mm. longis. *Ovarium* ad suturas villosum, lateribus glabrum, stipite brevi; stylus primo incurvus, ventrice fere ad apicem villosus; stigma mediocre.

INDO-CHINA. Burma: Ani Sakan and Maymyo, 800-1050 m., *Lace* 6208.

Ripe pods, believed to belong to this species, were found on the ground in the hot weather. They are very dark brown in colour,

shining, glabrous, slightly curved, 37–40 cm. long, 3·5–4·2 cm. broad and about 1·3 cm. thick at the seeds, the apex is rounded and apiculate and the base gradually narrowed into the 6–10 cm. long stipe. The valves are strongly nerved, considerably constricted between the seeds and thickened along both sutures. Seeds 14–18, narrowly obovate or elliptic, turgid, dark brown, about 2·2 cm. long by 1·4 cm. across.

Acacia insuavis, *Lace* [Leguminosae–Mimoseae]; ab *A. pinnata*, Willd., foliis longioribus, foliolis majoribus, capitulis majoribus longius pedunculatis, inter alia recedit.

Frutex grandis, scandens, ramis late extensis cinereo-corticatis, ramulis juventute viridibus striatis molliter crispatis albo-pubescentibus lenticellatis; ramuli, petioli inflorescentiaeque ramuli aculeis rectis 1 mm. longis vel in ramulis usque 3 mm. attingentibus longioribus interdum parum curvatis pallide brunneis glabris hic illic instructi vel interdum inarmati. *Folia* 16–25 cm. longa (petiolo excluso), petiolo 3–5 cm. longo pubescente striato prope basem glandula oblonga sessili ornato suffulta, rhachi dense crispatis tomentosa superne glandulis 1–4 parvis sessilibus instructa; stipulae parvae, triangulares, cito caducae; pinnae utrinque 13–30, 2·5–9·5 cm. longae, rhachi dense crispatis albo-tomentosa; foliola utrinque 30–80, imbricata, anguste linearia, mucronata, basi inaequilateralia, truncata, 5 mm. longa, vix 1 mm. lata, nervulis obscuris, pagina utraque glabra, ciliolata. *Capitula* in paniculas magnas terminales foliatis disposita, pallide lutea, 1–1·2 cm. diametro, pedunculis 2–5 cm. longis solitariis vel usque ad 5 in axillo quoque pilis brevibus crispatis albis instructis suffulta; bracteae spatulatae, pubescentes, 1·5 mm. longae. *Calyx* infundibuliformis, 2·5 mm. longus, extra puberulus, lobis triangularibus acutis vix 1 mm. longis ciliatis. *Corolla* 3 mm. longa, lobis triangularibus acutis 1 mm. longis ciliatis dorso pubescentibus. *Stamina* numerosissima (ultra 100), 4·5–5 mm. longa, basi parum connata, glabra, antheris parvis apice glandula stipitata fugace ornatis. *Ovarium* sericeum, stipite 1·5 mm. longo suffultum, stylo 4 mm. longo stamina superante.

INDO-CHINA. Burma: Ani Sakan, near Maymyo, 900 m., *Lace* 6173. Burmese name, Subok.

Occurs in many parts of Burma, in forests and near villages where it is probably sometimes cultivated. The branches and leaves when crushed give out a most foetid odour.

Acacia macrocephala, *Lace* [Leguminosae–Mimoseae]; ab *A. pennata*, Willd., capitulis multo majoribus facile distinguenda.

Frutex scandens; ramuli brunnei, striati, multilenticellati, primo ut petioli, rhachis pedunculique tomento brevi denso rubiginoso furfuraceo-glanduloso tecti, aculeis parvis curvatis. *Folia* usque ad 22 cm. longa, petiolo circa 4 cm. longo striato glandula oblonga sessilia 0·75 mm. alta basin versus instructo suffulta; rhachis canaliculata superne glandulis tribus sessilibus instructa; stipulae circa 3 mm. longae, cito deciduae; pinnae utrinque 12–13, rhachi crispatis pubescente, 3–8·5 cm. longae, foliola utrinque 35–65, inferiora parum imbricata; linearia, acuta, basi truncata, 5–8 mm. longa, 1 mm. lata, costa tenui supra fere obsoleta infra

inconspicua, nervis saepissime omnino obscuris, glabra, praesertim inferne sparse ciliata. *Capitula* in paniculas terminales foliatis disposita, 2-2.5 cm. diametro, pedunculis 3.5-4.5 cm. solitariis vel usque 5-fasciculatis suffulta; bractae ultra 2 mm. longae, lineares, apice latiores et incrassatae, glanduloso-pubescentes. *Calyx* infundibuliformis, 3.5-4 mm. longus, extra pubescens, intra glaber, lobis 1.5-2 mm. longis deltoideis lateribus parum convexis, acutis. *Corolla* 5 mm. longa, nervo mediano brunneo conspicuo, lobis 1.5 mm. longis deltoideis lateribus parum convexis obtusiusculis vel sicco ob marginem incurvum breviter pseudo-acuminatis ciliolatis dorso breviter puberulis. *Stamina* libera, numerosissima, filamentis 1 cm. longis glabris, antheris apice glandula stipitata decidua ornatis. *Ovarium* breviter hirsutum, stipite 1.5 mm. longo glabro suffultum, stylo 0.8 cm. longo inferne sparse puberulo.

INDO-CHINA. Burma: Bhamo District, Sinlum Kaba, 1700 m., *Lace* 5787.

Albizzia crassiramea*, *Lace [Leguminosae-Mimoseae]; ab *A. Gamblei*, Prain, cui affinis, foliis majoribus, legumine rubro-brunnea haud stramineo ad semina prominenter laxè reticulato distinguenda.

Arbor mediocris; ramuli validi, 8 mm. diametro, striati, puberuli, lenticellati, fusco-corticati. *Petoli* ad 7.5 cm. longi, rhachem subaequantés vel saepius ea longiores, striati, puberuli, supra haud alte canaliculati, glandula oblonga rotundatave carnosa sessili prope basem instructi; pinnae utrinsecus plerumque 3, rarius 2, terminales usque ad 18 cm. longae, rhachilla glandula oblonga plana sessili inter paria duo suprema foliolorum saepius instructa; foliola utrinsecus 2-5, oblonga vel oblongo-obovata vel terminalia obovata vel oblongo-obovata, apice rotundata, brevissime apiculata, basi plus minusve inaequilateralialia, usque ad 7.5 cm. longa et 4 cm. lata, firme chartacea, supra glabra, nitida, subtus pilis brevibus pallide brunneis adpressis praeterea pilis longioribus divaricatis ad costam nervosque praesertim versus costae basem instructa, nervis lateralibus utrinque ad 6 supra prominulis subtus prominentibus; stipulae fugaces. *Capitula* in paniculam grandem juventute ferrugineo-tomentellam disposita, pedunculo usque ad 3.5 cm. longo striato puberulo suffulta; alabastra albo-pubescentia. *Calyx* 2 mm. longus, extra aureo-brunneo-puberulus, intra glaber, dentibus minutis. *Corolla* 5 mm. longa, lobis oblongo-lanceolatis acutis 2 mm. longis extra pubescentibus intra glabras. *Staminum* tubus irregularis, ad 4 mm. altus, parte filamentorum libera usque ad 3 cm. longa. *Ovarium* glabrum, stylo 3.5 cm. longo. *Legumen* ad 19 cm. longum et 2.2 cm. latum, rubro-brunneum, glabrum, valvis ad semina prominenter laxè reticulatis.

INDO-CHINA. Burma: Maymyo Plateau, 1000 m., *Lace* 5910.

Oxyspora rupicola*, *Lace [Melastomaceae-Oxysporeae]; ab *O. cernua*, Hook. f. et Thoms., inter alia foliis conspicue minoribus recedit.

Suffrutex sarmentosus, ramulis primo obscure quadrangulis sulcatis minute squamosis mox glabris et conspicue quadrangulis

fistulosis pallide brunneo-vel cinereo-corticatis. *Folia* lanceolata, oblongo-lanceolata, apice acuminata, acuta, basi rotundata lateve cuneata, ad 13.8 cm. longa et 4.5 cm. lata, chartacea, pagina superiore minute tuberculata, inferiore pallidiora, glabra, e basi 5-nervia, nervis primariis et secundariis supra conspicuis subtus prominentibus, distanter minute serrulata, petiolo ad 3.5 cm. longo supra canaliculato summo apice barbato-piloso suffulta. *Inflorescentia* terminalis, pedunculo communi incluso ad 21 cm. longa et 7 cm. diametro, e cymis 3-7 floris sed saepissime 3-1-floris oppositis pedunculo usque ad 2.8 cm. longo suffultis constituta; pedicelli circa 5 mm. longi; bractee pedunculorum partialium 3 mm. longae, iis pedicellorum duplo longiores. *Receptaculum* oblongo-turbinatum, 8 mm. longum. *Calyx* brevis, lobis acuminatis dorso carinatis. *Petala* viva punicea, obovato-elliptica, apice caudato-acuminata, 1.1 cm. longa, 7 mm. lata. *Antherae* longiores 1 cm. longae, breviores 6 mm. longae, connectivo basi producto praesertim in antheris brevioribus quarum calcar 1 mm. longum; filamenta 6-7 mm. longa. *Stylus* 1.4 cm. longus, saepe uncinatus.

INDO-CHINA. Burma: near Maymyo Plateau; Gokteik Gorge, on rocks in middle of stream, 300 m., *Lace* 4978.

Lonicera Buchananii, *Lace* [Caprifoliaceae-Lonicereae]; a *L. macrantha*, DC. et *L. Leschenaultii*, Wall., foliis basi cuneatis nec truncatis nec cordatis indumento tenuiore subtus obtectis distinguenda.

Frutex? scandens, ramulis teretibus tomento molli griseo-albo brevi plus minusve deciduo tectis. *Folia* late ovata, apice acuta, mucronata, basi cuneata, ad 4.5 cm. longa et 2.7 cm. lata, chartaceo-membranacea, supra nitida, costa nervisque basem versus exceptis glabra, subtus glauca et pilis brevissimis albis pubescentia, nervis lateralibus utrinsecus plerumque 5 gracilibus arcuatis intra marginem integram parum recurvam anastomosantibus supra impressis subtus prominentibus; petioli graciles, supra canaliculati, 5-7 mm. longi, pubescentes. *Pedunculi* axillares, biflori, 1.2-2.2 cm. longi, superne parum incrassati; bractee binae, anguste lanceolatae, petiolatae, 0.5-1.4 cm. longae, indumento ei foliorum simili instructae; bracteolae ovatae, apice rotundatae acutaevae, paulo ultra 1 mm. longae, ciliatae. *Receptaculum* ovoideum, 3 mm. altum, inferne subglabrum, superne sparse pubescens. *Calycis* tubus vix 1 mm. longus, dentes 5, deltoidei, acuti, 1 mm. longi, dorso pubescentes, intra breviter adpresse pubescentes, ciliati. *Corollae* tubus gracilis, superne parum ampliatus, 3 cm. longus, extra pilis albis deflexis puberulus, intra pubescens, limbo bilabiato 2.5 cm. longo; labium posticum 4-lobum, lobis 3-5 mm. longis lateralibus quam medianis saepe longioribus apice obtusis margine parum undulatis, anticum circiter 2 mm. latum. *Stamina* exserta, antheris curvatis circa 4 mm. longis, filamentis glabris. *Stylus* filiformis, stamina superans, 6 cm. longus, glaber, stigmatate capitato.

INDO-CHINA. Burma: Myitkyina District, Watugyi, 180 m., *E. M. Buchanan* 11 (anno 1912).

Marsdenia carnosia, *Lace* [Asclepiadaceae-Marsdenieae]; ab affini *M. Jenkinsii*, Hook. f., pedicellis brevioribus floribusque conspicue minoribus recedit.

Frutex volubilis, caule crasso fistuloso; ramuli teretes, striati, tomento brevi denso griseo-brunnea tecti. *Folia* ovata vel ovato-lanceolata, basi cordata truncatave, apice subitius acuminata, obtusa, quoad magnitudinem variabilia, usque ad 15 cm. longa et 10 cm. lata, sicco coriacea, pagina utraque puberula, inferiore pallidiora, nervis lateralibus utrinsecus 6-8 primo obliquis rectis dein marginem versus curvatis intra marginem anastomosantibus supra prominentibus subtus saepissime valde latis planisque, nervis transversis paucis inconspicuis; petioli ad 7.5 cm. longi, canaliculati, indumento ut caulibus instructi. *Inflorescentia* axillaris, densa, globosa, 2-3 cm. diametro; pedunculus communis 1.5-3 cm. longus, ut ramuli tomentosus; pedicelli 0.5 cm. longi, pilis brevibus pallide brunneis dense tomentosi. *Calyx* 5-partitus, segmentis oblongis vel obovato-oblongis apice obtusis 4 mm. longis breviter ciliatis interioribus margine hyalinis omnibus dorso ut pedicellis tomentosis intra glabris. *Corollae* tubus superne dilatatus, circa 3 mm. longus, lobis 5 dextrorsum tortis apice rotundatis 3 mm. longis ciliolatis dorso glabris intra praesertim ad faucem villosis. *Coronae* squamae summo apice tantum liberae, inferne crassae, carnosae et ad staminum tubum adnatae, staminibus circiter dimidio breviores. *Antherarum* apices membranaceae 1 mm. longae. *Ovarium* glabrum.

INDO-CHINA. Burma: Maymyo Plateau, 1050 m., *Lace* 6143; *English* 31.

Swertia kachinensis, *Lace* [Melastomaceae-Swertieae]; a *S. angustifolia*, Ham., floribus magis numerosis, ramulis copiosis adscendentibus recedit.

Herba erecta, ramulis numerosis adscendentibus, caule 4-angulato vel 4-alato rubido pallideve brunneo 40-55 cm. alto. *Folia* subsessilia, lanceolata vel late lanceolata, subacuta, 4-5 cm. longa, 1 cm. lata, chartacea, glabra, e basi trinervia, nervis subtus prominentibus, nervis transversis subobscuris; ramorum floriferorum folia minora, anguste lanceolata. *Flores* numerosissima, 1-5 in axillo quoque, 4-meri; pedicelli 0.5-1 cm. longi. *Sepala* linearia, subacuta, 6-9 mm. longa, 1 mm. lata, trinervia. *Corollae* segmenta ovata, acuta, basi angustata, 7 mm. longa, 4 mm. lata, purpureo-maculata vel lineolata, margine incurva, glandula unica magis minusve transverse elliptica squama fimbriato-marginata late ovata quam glandula majore 1 mm. longa oblecta basi ornata. *Filamenta* complanata, 3 mm. longa, antheris oblongis. *Ovarium* ambitu oblongo lanceolatum.

INDO-CHINA. Burma; Ruby Mines District; Bernardmyo, 1540 m., *Lace* 6307.

Utricularia brevilabris, *Lace* [Lentibulariaceae]; ab *U. hirta*, Klein, cui affinis, scapo glabro, labio inferiore quam calcare saltem dimidio brevior differt.

Herba terrestris, erecta, 2-11 cm. alta. *Folia* spatulata vel lineari-spatulata, saepius 2-4 mm. longa et paulo ultra 1 mm,

lata, basi in petiolum plerumque lamina longiorem angustata. *Scapus* gracillimus, simplex, glaber, flores usque ad 5 gerens, squamis paucis lanceolatis longe acuminatis basi affixis circa 1 mm. longis instructus; pedicelli 1-2 mm. longi; bracteae squamis similes; bracteolae binae, minutissimae. *Calycis* segmenta inter se inaequalia, obovata, apice rotundata, circa 1.5 mm. longa, inferiore quam superiore latiore et paulo breviora. *Corolla* purpurea, ore minutissime puberula; labium posticum oblongo-oblancheolatum, apice obtusum, 2.5 mm. longum, 1 mm. latum, anticum trilobatum, lobis rotundatis, vivum 4-5 mm. latum, circa 2 mm. longum, maculis duobus luteis basi ornatum; calcar 5 mm. longum, gracile, apicem versus subacutum angustatum, horizontale, rectum vel apice parum sursum curvatum. *Semina* laxa et graciliter reticulata.

INDO-CHINA. Burma: Maymyo Plateau, in swampy ground, 1050 m., *Lace* 5489..

Uricularia Rogersiana, *Lace* [Lentibulariaceae]; ab affini *U. punctata*, Wall., partibus omnibus multo gracilioribus et corollae colore diverso differt.

Herba natans. *Folia* submersa, multipinnata, segmentis ultimis capillaribus utriculis numerosis instructis. *Scapus* erectus, gracilis, simplex, sparse puberulus, 2-4-florus; squamae suborbiculares, apice rotundatae, basi cordata, bracteis minores; pedicelli 3-6 mm. longi; bracteae late ovatae, apice obtusae, basi cordatae, 2 mm. latae, vix 2 mm. longae. *Calycis* segmenta suborbicularia, apice rotundata, emarginulata, superiore ultra 2 mm. longo et lato quam inferiore paulo majore. *Corolla* pallida, purpurco-venosa; labium superum oblongo-ovatum, apice obtusum, 5 mm. longum, inferum suborbitulare, apice rotundatum, 8 mm. longum, 7 mm. latum; calcar circa 1.75 mm. longum, superne subito breviter angustatum, summo apice obtusum. *Ovarium* ovoidaeum, paulo ultra 1 mm. altum, glabrum.

INDO-CHINA. Burma: Maymyo Plateau, 1050 m., *Lace* 5899. Named after Mr. C. Gilbert Rogers, Conservator of Forests, who kindly assisted in the collection of this plant and many others.

Uricularia subrecta, *Lace* [Lentibulariaceae]; ab *U. caerulea*, Linn., caule graciliore, floribus majoribus, calcare longiore acuto recedit.

Herba erecta interdum volubilis 6-30 cm. alta, glabra. *Folia* linearia vel lineari-spatulata, 1-3 cm. longa, vix ultra 1.5 mm. lata, apice rotundata vel obtusa, basi in petiolum usque ad 3 cm. longum angustata; utriculi breviter petiolati 1.5 mm. diametro. *Scapus* simplex, flores 1-7 (saepissime 3-5) gerens, squamis paucis acutis 2-3 mm. longis basi haud productis; pedicelli ad 1 cm. longi; bracteae persistentes, squamis similes; bracteolae binae, anguste lineares, circa 2 mm. longae. *Calycis* segmenta inter se subaequalia, ovata, acuminata, acuta, 4-5 mm. longa. *Corolla* caerulea vel puniceo-purpurea; labium superum lineari-oblongum, emarginatum, 6-7 mm. longum, 2 mm. latum, infimum lateribus reflexum, vivum 5 mm. diametro, emarginatum, ore pilis brevibus instructum; calcar 6-8 mm. longum, anguste conicum, apice acutum, parum arcuatum vel sicco fere rectum, angulum

rectum cum labio infimo efficiens. *Capsula* ovoidea, in calyce inclusa; semina globosa, longitudinaliter brunneo-costata.—*U. caerulea*, Coll. et Hemsl. in Journ. Linn. Soc., vol. xxviii, p. 101, vix Linn.

INDO-CHINA. Burma: Shan Hills Plateau; Koni, 1540 m., Collett 469; Maymyo Plateau, 1050 m., Lace 3151, 4845, 5488, 5505.

***Strobilanthes mogokensis*, Lace** [Acanthaceae—Ruellieae]; a *S. tamburense*, C. B. Clarke, spicis angustioribus, bracteis lanceolato-oblongis, corolla longiore recedit.

Frutex lignosus, caulibus sulcatis pallide brunneis praesertim ad nodos lenticellatis; ramuli juventute pilis albis glandulosis transverse septatis tecti, demum glabri. *Folia* late ovata, breviter acuminata, summo apice obtusa, inferiora basi truncata vel subito anguste cuneata, superiora truncata, sessilia, anguste cordata, usque ad 6 cm. longa, 4.5 cm. lata, chartacea pilis albis latis transverse septatis pagina utraque glanduloso-pubescentia, nervis lateralibus utrinsecus 6–7 tenuibus supra conspicuis subtus prominulatis, margine crenulata, ciliata; petioli foliorum inferiorum ad 1.5 cm. longi, supra canaliculati. *Spicae* et ramos et ramulos breves laterales terminantes et pauca in foliis supremis axillares, glanduloso-pubescentes, ad 5 cm. longae, vix 1 cm. diametro; bractee lanceolato-oblongae, 1 cm. longae; bracteolae anguste lanceolatae, 7–8 mm. longae, ut bractee extra glanduloso-pubescentes, intra glabrae. *Calyx* 1 cm. longus, fere ad basem bilabiatus, labio altero magis minusve ad medium lobato altero fere ad basem 2-fido, lobis omnibus lanceolatis acute acuminatis ciliatis dorso glanduloso-pubescentibus intra adpresse pubescentibus. *Corolla* arcuata, praeclare late ventricosa, 3 cm. longa, extra sparse pubescens intra nisi ad staminum insertionem glabra, parte cylindrica 8 mm. longa, lobis rotundatis. *Stamina* 4, filamentis fere glabris nisi ad basem. *Ovarium* pilis erectis albo-brunneis apice pennicellatum, stylo 2.5 cm. longo superne pilis longiusculis albis divaricatis instructo. *Capsula* 1 cm. longa, apicem versus pubescens; semina 2.5 mm. longa, fere 2 mm. lata, complanata, pilis brevibus elasticis tecta.

INDO-CHINA. Burma: Ruby Mines District, Bernardmyo to Mogok, 1850 m., Lace 6018.

***Gutzlaffia glandulosa*, Lace** [Acanthaceae—Ruellieae]; habitu *G. exareolatae*,* similis sed seminibus haud glabris differt.

Frutex, caule sulcato fere glabro. *Folia* ovato-lanceolata vel ovata apice caudato-acuminata, apiculata, basi acuminata, ad 15 cm. longa, 7 cm. lata, chartaceo-membranacea, pagina superiore pilis albis crassis hic illic instructa, inferiore ad nervos pilis adpressis reflexis dense instructa praeterea pilis albis crassis transverse septatis ad nervos nervulosque praesertim superne et marginem versus additis, nervis lateralibus utrinsecus 8–10 arcuatis supra conspicuis subtus prominentibus, acumine excepto serrato-crenata, petiolo 0.5–2.5 cm. longo breviter pubescente

* *Gutzlaffia exareolata*, Lace, comb. nov. = *Strobilanthes exareolatus*, C. B. Clarke.

supra canaliculato suffulta. *Spicae* glanduloso-pilosae, laxae, angustae, usque ad 6 cm. longae, in paniculas grandes terminales dispositae; flores oppositi, alabastris glanduloso-pubescentibus; bracteae 3 mm. longae, late truncatae, apice parum retusae; bracteolae lineares, apice rotundatae. *Calyx* subaequaliter 5-fidus, 5 mm. longus, segmentis anguste linearibus vix 1 mm. latis ciliatis. *Corolla* alba, purpureo-suffusa, 3 cm. longa, ore 1 cm. diametro, inferne gradatim angustata, lobis rotundatis extra superne sparse pubescentibus intra glabris nisi lobi inferioris apicem versus. *Stamina* 2, filamentis complanatis glabris. *Ovarium* 7 mm. altum, pilis albis erectis dense coronatum. *Semina* ultra 2 mm. longa, 1.5 mm. lata, basi excepta pilis brevibus elasticis tecta.

INDO-CHINA. Burma: Ruby Mines District; Bernardmyo to Mogok, 1850 m., *Lace* 6019.

XLII.—MIMOSA CAESIA AND M. INTSIA.

W. G. CRAIB.

The somewhat divergent views adopted with regard to these two Linnean species at different times by successive authors prompted the writer to an attempt to clear up the mystery surrounding them.

With *M. caesia* there seems to be practically no difficulty. Linnaeus based his species on Fl. Zeyl. 217, and of this there exist three specimens in Herb. Mus. Brit. which agree among themselves and which are identical with *Acacia Intsia*, Wight et Arn. In addition to the Fl. Zeyl. Linnaeus also quotes Plukenet. Unfortunately there does not appear to exist a specimen of Plukenet's plant, but from the figure the writer feels disposed to refer it, not to the Fl. Zeylanica plant but to the plant enumerated below as *Acacia torta*. According to Jackson there is a specimen written up as *caesia* in the Linnean herbarium, but not in Linnaeus's own handwriting. The writer proposes to limit *M. caesia* to Hermann's plant which is unquestionably the plant intended by Linnaeus.

Exactly which plant Linnaeus meant by his *M. Intsia* the writer has found impossible to decide. The first plant quoted by Linnaeus in his Sp. Pl., i. p. 522 is that of Hort. Cliff. 209. No trace of this particular Cliffortian plant was found in Herb. Mus. Brit., but a reference to the description reveals the fact that at least two plants are here involved. Linnaeus says concerning his plant "crescit in Madera et Malabar et variis Americae partibus, unde semina omni anno nobis allata fuere." From this word sequence one might be justified in assuming that the Cliffortian plant was grown not from Indian but from American seed. If this were so, and since no species of this group of *Acacia* is common to India and America, we have here sufficient grounds for excluding the species from the Indian flora.

Further, Linnaeus in both the Hort. Cliff. and Sp. Pl. quotes references to two Indian plants, viz., Pluk. Alm., iv. t. 122 f. 2 and Rheede, Hort. Mal., vi. t. 4. The former figure shows what is, judging from the pods, an *Acacia*, but an examination of the

actual plant in Herb. Mus. Brit. proves that Plukenet's material consists of a barren shoot of *Mimosa rubricaulis* and detached fruits of an *Acacia*. What Rheede's plant is the writer cannot definitely say. But the size of the capitula, as also some minor points in the description, lead one to suspect that *Mimosa rubricaulis* was used, at least in part, for both description and figure.

A new reference—Gronovius—is added by Linnaeus in his Sp. Pl., i.e., again he brings in an American plant.

Briefly, then, it may be stated that (1) of the two Indian references one is certainly to a mixture of an *Acacia* and a *Mimosa*, and the other, from which Linnaeus derived his specific epithet, to a figure for which the same *Mimosa* probably served at least in part, and (2) an American plant is involved by Linnaeus, and in all probability it was an American plant which Linnaeus had before him when describing the species.

With these two main conclusions in view the writer feels compelled to abolish the name *M. Intsia* altogether, at least so far as the Indian flora is concerned.

The writer regards the material examined by him, all of which has been referred to *Acacia caesia* and *A. Intsia*, as composed of at least six species. In the enumeration and description of new species which follows it will be noted that full synonymy is not given, the reason being that the species have been so mixed up that short of examining the actual specimens included under either or both species by successive authors, it has been found impossible to decide which particular plant is referred to.

ENUMERATION OF SPECIES WITH DESCRIPTION OF NEW SPECIES.

1. ***Acacia Hoenackeri*, Craib**, ab *A. caesia*, Willd., foliorum costa basi valde obliqua haud centrali facile distinguenda.

Ramuli primo brevius glanduloso-pubescentes, mox glabri, cortice rubro-brunneo oblecti, aculeis brevibus rectis hic illic armati. *Folia* 6–10 cm. (petiolo communi 3–4 cm. longo excluso) longa; petiolus communis, primo glanduloso-puberulus, mox glaber, ut rhachis infra aculeatus, sulcatus, supra basem versus glandula oblonga fere 5 mm. longa sessili glabra et apicem versus glandula orbiculari vix 2 mm. diametro sessili glabra instructus; rhachis superne glandulis 2–4 sessilibus instructa; pinnae utrinque 6, circa 8 cm. longae, petiolo circa 5 mm. longo suffultae; foliola utrinque ad 20, oblonga, apice rotundata, basi truncata, valde inaequilateralis, saepius circa 1.2 cm. longa et 3.75 mm. lata, matura glabra, subtus pallidiora, nervis supra conspicuis subtus prominentibus, chartacea. *Capitula* 1 cm. diametro, et axillaria et in paniculam terminalem strictam disposita, pedunculo ad 4 cm. longo ut rhachi glanduloso-puberulo suffulta. *Calyx* 2 mm. longus. *Corolla* calyce duplo longior. *Ovarium* pubescens, stipite glabro suffultum.

South India. Nilghiris, Khundas Range, *Hohenacker* 1602 (Herb. Kew et Herb. Mus. Brit.).

2. ***A. caesia*, Willd.** *A. Intsia*, Wight et Arn., l.c. (quoad descr. et spec.). *Mimosa caesia*, Linn., Sp. Pl., p. 518 (quoad plantam zeylanicam).

India. *Roxburgh* (Herb. Kew, Mus. Brit. et Edin.). *Wight* 575 (Herb. Kew et Edin.), 578, K.D. 895 (Herb. Kew), *Koenig* (Herb. Mus. Brit.), Wall. Cat. 5248 A, B, C (pro parte), D, 5252 B (Herb. Kew). Madras Presidency; *Cleghorn* (Herb. Edin.), Cudappa, *Beddome* 2653, 2654, Anamalays, *Beddome* 2652 (Herb. Mus. Brit.). Hyderabad, *Campbell* (Herb. Edin.). United Provinces, Nāwabganj, *Hamilton* 2375 (Herb. Edin.).

Ceylon. *Hermann* (Herb. Mus. Brit.—type).

Cult. Hort. Bot. Calc. (Herb. Edin.).

3. ***Acacia oxyphylla***, *Graham* in Wall. Cat. 5252, quoad plantam sylhetensem tantum, nomen nudum; ab *A. caesia*, Willd., cui valde affinis, foliis subtus inconspicue breviter adpresse pubescentibus, glandula petiolari haud obliqua, leguminibus latoribus facile distinguenda.

Ramuli primo crispatis pubescentes, mox glabri, pallide corticati, aculeis validiusculis recurvis armati. *Folia* 7–10 cm. longa, petiolo communi 4–5 cm. longo excluso; petiolus communis ut rhachis primo crispatis pubescens, demum plus minusve glabrescens, infra aculeatus, paulo supra basem glandula conspicua ornatus; rhachis superne glandula solitaria (an semper solitaria?) instructa; pinnae utrinque 6–9, breviter petiolatae; foliola anguste oblonga, basi latere altero rotundata, altero cuneata, apice apiculo saepe recto saepe paulo prorsus directo instructa, circa 1.2–1.3 cm. longa, 3.75 mm. lata, chartacea, supra glabra, subtus pallidiora et inconspicue sparse adpresse pubescentia, nervis supra conspicuis subtus prominulis. *Capitula* circa 1.2 cm. diametro, in paniculam terminalem foliatam disposita, pedunculo vix 2 cm. longo suffulta. *Calyx* 2.5 mm. longus. *Corolla* 3 mm. longa. *Ovarium* pubescens, stipite glabro suffultum. *Legumina* glabra, ad 15 cm. longa et 2 cm. lata.

Assam. *Jenkins* (Herb. Kew et Edin.), *Griffith* 526 (Herb. Kew); Sylhet, *De Silva et Gomez* in Wall. Cat. 5252 A; Cachar, *Hook. f. et Thoms.* (Herb. Kew).

4. ***Acacia Gageana***, *Craib*, ab *A. caesia*, Willd., pinnis foliolisque multo numerosioribus facile distinguenda.

Ramuli juventute crispatis puberuli, pluri-sulcati, aculeis recurvis conspicuis vel fere deficientibus plus minusve in lineas dispositis armati. *Folia* ad 15 cm. longa (petiolo 5–7 cm. longo excluso); petioli ut ramuli crispatis puberuli, basem versus glandula parva orbiculari sessili instructi; rhachis superne glandulis sessilibus circa 3 ut glandula petiolari apice adpresse pubescentibus ornata; pinnae utrinque 8–11, circa 10 cm. longae, breviter petiolatae; foliola utrinque 30–40, conferta, anguste oblonga, apice rotundata et apiculo prorsus directo instructa, basi truncata, circiter 1.1 cm. longa et 2.27 mm. lata, chartacea, ciliata, subtus pallidiora, nervis supra conspicuis subtus prominulis. *Capitula* vix 1 cm. diametro, in paniculam grandem foliatam disposita, pedunculo communi circa 2 cm. longo suffulta. *Calyx* late cam-

panulatus, 1.5 mm. longus. *Corolla* 2.5 mm. longa. *Ovarium* stipite vix 1 mm. longo suffultum.

Sikkim. Lower Hills, J. D. Hooker (Herb. Kew—*type*); Sit-tong, 900 m., *Ribu et Rhomoo* (Herb. Edin.). N. Bengal, Alipur, *Hamilton* 2372 (Herb. Edin.). Assam. *Jenkins* 69 (Herb. Kew), *Jenkins*, sine num. (Herb. Edin.). Kumaon. Bagesar, c. 1050 m., *Strachey & Winterbottom* 4 (Herb. Kew). Kumaon or Garhwal, *Madden* 207 pro parte (Herb. Edin.).

5. *Acacia columnaris*, *Craib*, ab *A. caesia*, Willd., pinnis foliolisque numerosioribus, glandulis petiolaribus columnaribus distinguenda.

Ramuli primo tomentelli, sulcati, mox glabri, cinereo-corticati, aculeis circa 1–2 mm. longis rectis vel parum declinatis densius armati. *Folia* circa 8.5 cm. (petiolo communi vix 3 cm. longo excluso) longa; petioli communes primo crispatis puberuli, mox glabri, supra canaliculati, basem versus glandula 2 mm. alta instructi; rhachis glandulis columnaribus 3–4 superne ornata, indumento ut petioli instructa, subtus spinis decurvis armata; pinnae utrinque 8, 5–6 cm. longae, breviter petiolatae; foliola utrinque 10–17, oblonga, apiculo recto vel saepius parum prorsus directo instructa, basi truncata, ad 1.1 cm. longa et 3.5 mm. lata, chartacea, demum glabra, supra nitida, subtus pallidiora, opaca, nervis subtus prominentibus supra conspicuis, sessilia. *Capitula* circa 8–9 mm. diametro, in paniculam terminalem ferrugineo-tomentosam disposita, pedunculo communi circa 8 mm. longo suffulta. *Calycis* extra adpresse parce ferrugineo-pubescentis tubus 1.25 mm. longus, lobi 0.75 mm. longi, deltoidei, acuti. *Corolla* 2.5 mm. longa, dorso superne tenuiter adpresse ferrugineo-pubescentis. *Stamina* corollam duplo superantia. *Ovarium* pubescens, stipite 1 mm. longo glabro suffultum, stylo glabro.

South India. S. Canara, near Mangalore, *Hohenacker* 1643 (*type*—Herb. Kew et Mus. Brit.). N. Canara, *Talbot* 622 (Herb. Dehra Dun). Mysore, Sagar, 600 m., *Meebold* 2658 (Herb. Edin.).

Ceylon (loco haud indicato) *Mrs. Col. Walker, Thwaites* 1619, pro parte (Herb. Kew).

6. *A. torta*, *Craib*, comb. nov. *A. caesia*, Wight et Arn., Prodr., p. 278, non Willd. *Mimosa torta*, Roxb., Fl. Ind., ii. p. 566 et icon ined. in Herb. Kew.

Bombay Presidency. *Gibson, Gethune, Dalzell* (Herb. Kew); Concan, *Stocks* (Herb. Kew et Mus. Brit.); near Mangalore, *Hohenacker* 609 a (Herb. Kew); Belgaum, *Ritchie*, 1737 (Herb. Kew et Edin.), 1737/3 (Herb. Kew). Madras Presidency. Jeddniroo near Vizeanagaram, *Cleghorn* 60 (Herb. Edin.); Naggur Hills, *Wight* K.D. 891 (Herb. Kew). Behar, *T. Thomson* 382 (Herb. Kew et Mus. Brit.), *Hook. f.* (Herb. Kew), Mongyr, *Hamilton* 2376 (Herb. Edin.), *Hamilton in Wall. Cat.* 5249 (Herb. Kew). Central Provinces, Pachmarhi, *Brandis* (Herb. Kew). Kumaon or Garhwal, *Madden* 207 pro parte (Herb. Edin.). N.W. India, *Stewart* 651 (Herb. Edin.).

XLIII.—MISCELLANEOUS NOTES.

MR. J. R. BOVELL.—We learn that Mr. J. R. Bovell, I.S.O., F.L.S., has resigned the Superintendentship of the Barbados Department of Agriculture, and has accepted the position of Agricultural Superintendent of important sugar estates in British Guiana.

MR. CYRIL WARREN, lately a member of the gardening staff of the Royal Botanic Gardens, has been appointed by the Secretary of State for the Colonies, on the recommendation of Kew, a Curator in the Agricultural Department of the Southern Provinces of Nigeria.

The Pagoda, Royal Gardens, Kew.—The Pagoda was built in 1761–2 to the design of Sir W. Chambers. As originally built, the main roof with the ornamental chains and hoops to the terminal pole were of copper, double gilded. The minor roofs were covered with highly-coloured iron plates, and ornamental dragons crouched at the hip terminals of the roofs. The dragons were in wood, and treated with highly-coloured enamels. These features existed up to about 1820. But the iron cover plates of minor roofs and the wooden dragons must have perished and been removed soon after, when the roofs were slated.

The severely straight lines of these roofs—now shorn of dragons and Eastern colour—was much lamented, and in 1845, when “an expensive scaffold had been erected round the Pagoda to paint the wood, etc., point the brickwork, and erect a new terminal pole,” Sir W. J. Hooker suggested that it was a fitting opportunity to restore the original features of the Pagoda by fixing new “metal or glass” dragons to the angles of the roofs. This was supported by Mr. Decimus Burton, who, however, wished to improve on the original design. His sketch of the proposed alterations is still to be seen in No. 3 Museum. He suggested that in addition to restoring the dragons, the eaves should be curved up at the angles, and the roofs covered with copper, and that both roofs and brickwork should be painted to harmonise better with a Chinese structure. Projecting bells were to be hung at the hip terminals, and chains were to hang from the terminal pole to the eaves of main roof. But the estimated cost of £3,500 for these alterations made their execution impossible. Sir W. J. Hooker’s suggestion to replace the dragons, and so restore the Pagoda to the original design was estimated to cost £850, and proved also too costly for acceptance.

Nothing daunted, he returned to the charge in 1856, renewing his suggestion of 1845 for the restoration of the dragons, etc., but they were again “postponed for another year,” and so the Pagoda remains to this day.

On the occasion of executing the periodic painting and repairs at the Pagoda this summer—1915—investigation was made to discover the cause of so much rain coming through the roof and ceiling.

The roof generally was found to be covered with copper. It is in excellent condition, and shows no signs of disturbance or repair since its original construction. The pole and its flashing, however, were found to be so defective as to need renewing at once. Authority having been obtained for this, a careful survey was made with a view to seeing how the new pole could best be got into position. All the evidence obtained, both inside and out, went to show that the old pole, about 30 ft. long, had been got up by an outside scaffold and derrick, and dropped down through the hole made in the level table at the apex of the roof. But as all the painting at the various levels had been done from bracket or cantilever scaffolds, which are not adapted for, or high enough to get a pole up and into position from the outside, a plan was devised of getting the new pole up by a cantilever fixed on the top floor and passing through the window. By this the pole was hoisted through the window of the ninth floor, up through the staircase well, and through the ceiling trap door into position.

On taking down the old pole, a pencil note was found on the lower end, under the roof, recording that "this pole was erected by J. Wickens, August 1st, 18(?)7." A knot on the top of the third figure made this date very uncertain. But fortunately, on uncovering the table round the pole at the roof apex, two more records were found of the same character, with the definite date of 1867. This definitely fixes the date of erection of the pole just taken down.

A further interesting discovery was made of a cut-in date of August 20th, 1825, on the bed-plate on which the pole stands, and it is fairly certain that a new pole would be erected at the same time as the insertion of the bed-plate.

There is evidence, therefore, that the various terminal poles were erected at the following dates—when the Pagoda was new in 1762, and in August, 1825, June, 1845, August, 1867, and the last in September, 1915.

The "life" of these poles thus varies from 20 years upwards. It is more than probable, however, that the first pole did not last till 1825, but was renewed some time about the end of the 18th century. The present pole is therefore the fifth or sixth pole erected, and it is hoped that as this has been creosoted it will last longer than any of its predecessors.

G. D. P.

Dendrobium Hookerianum with fringed petals.—A curious peloriate form of *Dendrobium Hookerianum*, Lindl., has been sent to Kew by Mr. J. Gurney Fowler, Brackenhurst, Pembury, in which the petals are enlarged to twice their normal breadth and deeply fringed, as in the lip. The condition seems to be permanent, for all the flowers are alike, as was also the case last year, when it was recorded under the name of *D. Hookerianum*, Fowler's variety (*Gard. Chron.* 1914, ser. 3, lvi. p. 200). The cause of the peculiarity is not apparent, for the flowers are normal in other respects. In one petal, however, of the four-flowered inflorescence there is a narrow maroon-coloured streak on one side of the basal half, which occupies the same position as the

maroon-coloured blotch on the lip of the normal form of the species, which is figured at t. 6013 of the *Botanical Magazine*. In the allied species, *D. fimbriatum*, Hook., and *D. Brymerianum*, Reichb. f., the lip is normally fringed, but in *D. Harveyanum*, Reichb. f., the petals as well as the lip are normally fringed, though in other respects the species is very distinct from the abnormal variety now under notice. A plant was exhibited at the meeting of the Royal Horticultural Society held on September 14th last, together with one of the normal form for comparison.

R. A. R.

Botanical Magazine for October.—The plants figured are *Pyrus yunnanensis*, Franch. (t. 8629); *Gentiana gracilipes*, Turrill (t. 8630); *Promenaea microptera*, Reichb. f. (t. 8631); *Streptocarpus denticulata*, Turrill (t. 8632) and *Clematis uncinata*, Champion ex Benth. forma *retusa*, Sprague (t. 8633).

The *Pyrus* is a handsome tree belonging to the section *Eriolobus*, which Roemer considered a separate genus. *P. Tschonoskii*, Maxim., from Japan, and *P. trilobata*, DC., from Syria, also belong to this section. This group differs from the *Aria* group in which Franchet placed *P. yunnanensis* by the styles being united for their lower third, or more, and it is distinguished from *Malus* by the grit-cells in the flesh of the fruit. The plant figured was raised from seed sent to Coombe Wood, collected by Mr. E. H. Wilson in the district of Chang-yang, Western China, and was purchased from Messrs. Veitch for the Kew Collection in 1913. This species was originally discovered by Delavay in Yunnan.

We are indebted to Mr. H. J. Elwes for the material of the interesting Chinese gentian *G. gracilipes*, which was raised at Colesborne from seed collected in Kansu and received through the late Mr. R. Woodward. This species belongs to the section *aptera* of Kusnezow, and is nearly allied both to *G. dahurica*, Fisch., and *G. Fetisowii*, Maxim. With the former it agrees closely, but differs in its longer pedicels and spathaceously divided calyx, in which latter character it approaches *G. Fetisowii*.

Promenaea microptera is an interesting little orchid, included among those presented by the Dowager Lady Lawrence to Kew. It was described in 1881 by Reichenbach, but its exact habitat is uncertain. The nearest ally to the species is *P. xanthina*, Lindl., from Brazil, but the genus also occurs in Guiana and Colombia. *Promenaea* was founded as a genus by Lindley, and after having been merged in *Zygopetalum* by Reichenbach, was restored later by him to generic rank.

The *Streptocarpus* belongs to the section *Unifoliatae*, of the genus of which some 15 species are known from South Africa. *S. denticulata* is a native of the Transvaal, and the seed was collected by Mr. J. N. Thorncroft on a mountain near Barberton. It is allied to *S. pusilla*, C. B. Clarke, but differs in having glabrous leaves and short-tubed flowers. The rose-purple flowers are very distinctive.

The striking form of *Clematis uncinata* differs from the type plant in its leafy inflorescence and in having its leaflets retuse at

the apex. The material for the plate was supplied by Capt. D. V. Pirie from his garden at the Château de Varennes, near Angers, where it forms a charming picture clambering over an old grey wall.

Cotoneaster wood for Golf Clubs.—In a letter recently received from Sir Herbert Maxwell, he sends the following interesting information as to the value of the wood of *Cotoneaster frigida* for making the heads of golf clubs:—

“When I began golf 50 years ago, it was considered that crab was the only wood fit for making into club heads. The rapid spread of golf all over the world soon used up the available supply of crab, so the makers took to beech. Beech was apt to snap at the neck of the club and was abandoned for persimmon, which, I believe, is now used almost exclusively.

“I know not what the world’s resources in persimmon may be, but two years ago, having occasion to remove a large *Cotoneaster frigida*, I thought the wood likely to prove as good as persimmon. I therefore sent some chunks of it to Charlie Hunter, the father of golf at Prestwick, and when I was there a few weeks ago, he presented me with a very pretty club made of the *Cotoneaster*. He says the wood is most suitable. There is no difficulty in growing any quantity of it, for it sows itself freely, but requires about 40 years’ growth to produce timber of suitable size.”

It is also probable that the wood of *Cotoneaster bacillaris* may be found suitable for making club heads. It grows freely in this country, forming stems several inches in diameter. Gamble “A Manual of Indian Timbers,” p. 326, says of this species: “Weight on an average 57 lbs. per cubic foot. The wood is used for making walking-sticks. The alpenstocks used throughout the West Himalaya are usually made of it. Aitchison says that in the Kuran Valley it forms a great part of the scrub within the hills at 7–8000 ft., and is largely in request for agricultural implements, staves and bows.”

Flora of the Upper Gangetic Plain.—The first part of volume III. of Mr. Duthie’s work has recently been published. It contains the *Monochlamydeae* from *Nyctaginaceae* to *Ceratophyllaceae*, and comprises 168 pages.

The *Nyctaginaceae* are represented by 3 species of *Boerhaavia*; *Amarantaceae* by 9 genera, 18 species; *Chenopodiaceae*, 5 genera, 7 species; *Polygonaceae*, 2 genera, 17 species; *Aristolochiaceae*, 1 species; *Piperaceae*, 2 genera, 2 species; *Lauraceae*, 6 genera, 10 species; *Elaeagnaceae*, 1 species; *Loranthaceae*, 2 genera, 7 species; *Santalaceae*, 1 species; *Euphorbiaceae*, 21 genera, 51 species; *Urticaceae*, 17 genera, 44 species, 18 of which are *Ficus*. *Casuarinaceae*, 1 cultivated species; *Cupuliferæ*, 1 *Quercus*; *Salicaceae*, 2 species, and *Ceratophyllaceae*, 1 species. In addition to the above, Mr. Duthie gives useful descriptive notes on all the introduced and cultivated species of the families dealt with.

Materials for a Flora of the Malayan Peninsula.—Since our notice of No. 21 of this work (*K. B.* 1909, p. 159), which marked the conclusion of the account of the *Gamopetalae*, four parts, Nos. 22–25, dealing with most of the *Monochlamydeae* have been published.

Part 22 appeared in 1912 and dealt with the families *Nyctaginaceae*, *Amarantaceae*, *Polygonaceae*, *Aristolochiaceae*, *Chloranthaceae*, *Lauraceae* and *Hernandiaceae*, all the work of Mr. Gamble, with the exception of the *Polygonaceae* by Major Gage. The *Nyctaginaceae* are represented by a single species, *Boerhaavia diffusa*, L. The number of species of *Amarantaceae* is 14, distributed under 10 genera; *Polygonaceae*, 8 species of *Polygonum*; *Aristolochiaceae*, 8 species under 3 genera; *Chloranthaceae*, 2 species of *Chloranthus*. The *Lauraceae*, which occupy the major portion of the part, are very abundant, with 171 species distributed under 16 genera; there are no less than 55 species of the genus *Litsea*. *Hernandiaceae* is represented by 1 species of *Hernandia*, the genera *Illigera* and *Gyrocarpus* having been included in an earlier volume under *Combretaceae*.

Part 23, also published in 1912, contains Mr. Gamble's account of the families *Myristicaceae*, 4 genera and 46 species; *Monimiaceae*, 2 genera and 7 species; *Thymelaeaceae*, 5 genera and 8 species; *Gonystylaceae*, 1 species of *Gonystylus*; *Elaeagnaceae*, 1 *Elaeagnus*; *Santalaceae*, 2 genera and 9 species; and the genus *Champereia*, Griff., which, according to Engler and Prantl, should have been included in the *Olacaceae*.

Part 24 appeared in 1914, and deals with *Nepenthaceae*, 10 species of *Nepenthes*, by Dr. J. M. Macfarlane; *Piperaceae*, 2 genera and 78 species, by M. C. De Candolle; *Proteaceae*, 9 species of *Helicia*, and *Loranthaceae*, 8 genera and 44 species, by Mr. Gamble.

Part 25, recently published, contains the families *Cytinaceae*, 2 genera, each with a single species, and *Balanophoraceae*, 2 genera and 6 species, by Mr. H. N. Ridley, together with the following by Mr. Gamble: *Juglandaceae*, 1 genus with 3 species; *Myricaceae*, 1 species of *Myrica*; *Casuarinaceae*, 1 *Casuarina*; *Fagaceae*, 3 genera with 51 species, and *Salicaceae*, 1 *Salix*. In regard to the genera of *Fagaceae*, Mr. Gamble has followed with slight modifications the classification proposed by Prantl in Engler and Prantl, *Die Natürlichen Pflanzenfamilien*. The genus *Quercus*, as thus restricted, is represented by only 3 species, whilst the remainder of the Oaks described from the Peninsula by Sir G. King in his monograph and subsequently by Sir J. D. Hooker in the *Flora of British India* are referred to the genus *Pasania* with 35 species.

With the elaboration of the *Euphorbiaceae*, *Urticaceae*, and *Gymnosperms*, the "Materials" will be completed, the *Monocotyledons* comprising the sixth volume having formed the subject of a separate publication entitled "Materials for a Flora of the Malay Peninsula—Monocotyledons," by H. N. Ridley (Methodist Publishing House, Singapore, 1907–8). J. H.

Flora of Aden.*—The second part of the Rev. Father Blatter's interesting work has now appeared. Part I., published last year, is devoted to (1) a history of botanical exploration in Aden, (2) physical aspects of the district, and (3) a general account of the vegetation. Accompanying it is an excellent large scale map and five reproductions of photographs showing general views of the town and harbour. The majority of collectors of Aden plants have been travellers on their way to India or East Africa, who were unable to spend more than a few hours at the port. Continuous collecting by a resident during the whole year would perhaps yield further interesting results.

Part II. contains the bulk of the systematic account; it includes (1) a synopsis of the natural orders, which are arranged from *Ranunculaceae* to the end of *Urticaceae*, after Bentham and Hooker's *Genera Plantarum*, and (2) descriptions of the families, genera and species, with keys to the two last mentioned. We learn from the preface that the descriptions are not wholly the work of the author, but have mostly been adapted from botanical works dealing with neighbouring countries. The number of indigenous species is 250, distributed under 138 genera. Of these, 47 species are *Monocotyledons*. The largest family is *Gramineae* with 33 species, *Leguminosae* has 32, *Capparidaceae* 18, *Euphorbiaceae* 13, *Boraginaceae* and *Chenopodiaceae* 11 each, *Compositae* 10, *Scrophulariaceae* 9, whilst most of the other families are represented by one or two species. No less than 19 families claim only a single species, and Father Blatter considers that this paucity is due to the excessive heat and drought which tend towards the entire extinction of vegetable life.

Father Blatter's publication is a valuable contribution to our knowledge of the vegetation of Southern Arabia.

J. H.

* Records of the Botanical Survey of India, vol. vii.—Nos. 1 and 2 (1914-15): Flora of Aden, by Ethelbert Blatter, S.J., F.L.S.—Calcutta, Superintendent Government Printing, India.